
Ex. 6 - Personal Privacy

SAN LUIS OBISPO, CALIFORNIA

September 21, 2015

Department of Conservation
801 K Street, MS 24-02
Sacramento, California 95814

Attention: Aquifer Exemption

To Department of Conservation:

This letter is in response to the proposed expansion of the current aquifer exemption designation for the Dollie sands of the Pismo formation in the Arroyo Grande oil field, located in unincorporated San Luis Obispo County near the intersection of Ormonde Road and Price Canyon Road. The purpose of this letter is to document our concerns and request additional information associated with the aquifer exemption request by Freeport-McMoRan Oil & Gas LLC (FM O&G). We appreciate the opportunity to express our concerns associated with this aquifer exemption request by FM O&G. We have reviewed the available public documentation associated with this request and associated regulatory guidance documents made available by the U.S. Environmental Protection Agency (EPA) and the State of California. Whenever possible we have cited the information and regulations discussed in this letter. Please realize that we understand the historical significance of this oil field and recognize that FM O&G has been a good neighbor and we generally support the oil production in the region and recognize its importance for economic viability for the County. However, being so close to the vicinity of the proposed exemption areas we feel it is necessary, on behalf of our family and our neighbors, to provide public comments and submit requests for additional information as allowed by Public Resources Code section 3131 Part (a).3.b.

The proposed aquifer exemption request is being considered by the California Department of Conservation, Division of Oil, Gas and Geothermal Resources ("Division"), in consultation with the State Water Resources Control Board and the Central Coast Regional Water Quality Control Board (herein referred to as "the Water Boards") as presented in the Notice of Proposed Aquifer Exemption published August 20, 2015 (Division, 2015). It is anticipated that this letter and the disposition of all comments will be included within the aquifer exemption proposal to the EPA (if approved). It is also our understanding both the Division and the Water Boards preliminarily concur that the proposed aquifer exemption area

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San Luis Obispo, CA 93401

meets the criteria for exemption under Code of Federal Regulations (CFR), title 40, section 146.4 [40 CFR 146.4] because it does not currently serve as a source of drinking water, and it will not serve as a source of drinking water in the future because this area is currently hydrocarbon producing or is capable of hydrocarbon production (Division, 2015). Additionally, the Division and the Water Boards also preliminarily concur that the injected fluid associated with the proposed Class II injection wells would be exempted and are not expected to affect the water quality that is, or may reasonably be, used for any beneficial use, due to geologic conditions and hydraulic controls (Division, 2015).

In light of recent developments in California and new understanding of how the program is implemented, scrutiny of the Aquifer Exemption program has been warranted (CWA, 2015). The underground Injection Control (UIC) program is included in the nation's landmark drinking water law because its purpose is to prevent endangerment of underground sources of drinking water. While Safe Water Drinking Act (SDWA) mandated that UIC program activities shall not "interfere with or impede" injection associated with oil and gas production, it also notes that this is true "unless such requirements are essential to assure that underground sources of drinking water will not be endangered by such injection" (CWA, 2015). The Division is currently reviewing its entire UIC program and has acknowledged that the aquifer exemption program needs to be updated, we hope this specific aquifer exemption request is carefully reevaluated after the public comment phase of this project and before approval of the exemption. While modeling the behavior of the injected fluids is not required, we highly recommend that migration modeling for exemptions pertaining to the aquifer be performed to ensure that the injected fluid does not migrate outside the injection zone.

My name is [Ex. 6 - Personal Privacy] and my family owns properties at [Ex. 6 - Personal Privacy] San Luis Obispo, California, 93401. Our property is located approximately 6,300 feet to the northeast of Ormonde Road and Price Canyon Road intersection. Our parcels are located adjacent to the Arroyo Grande Oilfield (AROF) boundary as can be shown on a vicinity map in Figure 1 of Attachment 1. My family has owned this ranch property since 1979 and we utilize the land for livestock and residential purposes. We currently have a water well used for beneficial purposes on our property (e.g. livestock, water supply, drinking water, etc.) on our property and our primary concern is that the proposed activities will compromise the integrity, quality, and/or quantity of our existing underground source of drinking water (USDW) system. As of 2012, the water quality in our USDW is safe to drink, Attachment 2 provides water quality and well development information for our specific USDW. The applicant nor the Division has contacted us to perform baseline groundwater quality sampling. It should also be noted that in 1981 we experienced oil bubbling onto our property that was associated with steam injection from the AROF (also referred to as the Price Canyon oilfield)- which at the time, the Price Canyon operations were being operated by Grace

Petroleum. Please refer to Attachment 3 that provides the newspaper article from Saturday, July 11, 1981 from the local newspaper (now referred to as "The Tribune"). As you can see, our past experience with hydrocarbon contamination on our property greatly concerns us with the future potential of the proposed expanded operation by FM O&G's aquifer exemption request. This also contradicts the statements from the Division and the Water Boards that the AROF is not hydraulically connected to our properties and potentially a large number of other properties within the region that also rely on beneficial uses of water as defined by the state. We are also concerned the addition of new Class II wells within our vicinity will have the potential to exacerbate any potential hydraulic connectivity that may exist between our USDW and the oilfield.

The comments and request for information provided in this letter are based on our concerns for our family and other potentially affected individuals within the region, in addition to concerns associated with protection of human health and the environment. We understand that more than 4,000 aquifer exemptions have been approved over the history of the UIC program and that the vast majority of these have been straightforward actions that were completed in a timely manner (EPA, 2014). However, in our opinion, this specific aquifer exemption request is considerably more complex due to specific site conditions associated with the proposed request, which we intend to highlight in this letter. We believe the specific site conditions and lack of critical elements within FG O&M's application will and should lead to protracted discussions between the public, the EPA, and local and state authorities. Based on our review of pertinent regulatory and site specific documentation, the aquifer exemption request by FM O&G should be denied by the local and state authorities, and the EPA based on lack of adequate and sufficient technical, scientific, environmental monitoring, and legal information presented by FM O&G. We strongly believe that the aquifer exemption request falls under the category of a substantial program revision as discussed in EPA (2014); therefore, the Administrator shall ultimately be responsible for approving or denying the request if it makes it to that level.

Contrary to typical requests under the UIC program, and the preliminary concurrence of the Division and the Water Boards that this aquifer exemption meets regulatory criteria, we do not believe that the FG O&G aquifer exemption request and aquifer exemption application clearly meets 40 CFR 146.4. This aquifer exemption request is a substantial program revision and therefore requires a considerably more complex review process. One reason for this, is because the proposed exempted area is located adjacent to a large number of USDWs that are currently in use, and where the potential future use of the USDW is unclear. Additionally, as evidenced in our comments and requests for additional information, FM O&G's application lacks sufficient factual, technical, and legal basis for determination or approval of the request. Based on these findings, we are surprised that the EPA Region 9 and the state UIC program managers

have not scheduled a discussion, as recommended in EPA (2014), prior to submittal of the aquifer exemption application by FM O&G. There are numerous technical issues that require additional attention that should have been addressed prior to submittal of the FM O&G aquifer exemption application. If such discussions between the EPA and UIC program managers have occurred, then clearly there lacks robust recordkeeping available to the public. Please let us know if such discussions have occurred to date prior to the public meeting on September 21, 2015. We highly recommend that the significant disagreement presented in this public response document is elevated to a senior primacy program manager rather than allowing this to persist at the staff level.

One particular area of concern for this aquifer exemption request is the lack of statistically sound environmental monitoring data collected in the proposed aquifer exemption area and in surrounding areas where USDWs might be affected. Essentially there are no monitoring studies currently being conducted to quantify the amount of pollutants entering the environment and to monitor ambient levels for trends and potential problems. Specifically there is not enough water quality information to adequately characterize the existing groundwater quality conditions within the proposed exemption area or within the regional wells being used for beneficial use that can be potentially affected hydraulically, as evidenced on our property in 1981 from the AROF (see Attachment 3). Based on our review, there has been only one groundwater sample analyzed (W-1) [URS, 2014] within the northern area of the AROF located north of the Edna fault line but outside of the proposed aquifer exemption area. This is not significant enough to show the water quality on the north side of the AROF or within the proposed aquifer exemption area meets 40 CFR 146.4. In 2015, FM O&G installed four fiber optic temperature monitoring wells; however, there appears to be no planned water quality monitoring program for these wells.

The SDWA directed the EPA to establish an UIC program to prevent endangerment of USDWs [Section 1421(b)(1)], and without aquifer exemptions certain types of energy production (e.g. oil and gas), solution mining (e.g. uranium ISL facilities), or waste disposal would be severely limited in this country and restrict economic growth. However, it is important that the expansion of this particular project does not threaten or endanger the health and lives of the community and the environment for short-term economic gain of one company. Please carefully consider that the applicant has not demonstrated that exemption of this aquifer will not negatively impact the surrounding USDWs. There is general lack of qualified flow modeling, lack of baseline monitoring, and lack of overall knowledge of the complex dynamics of the groundwater system. The oil bubbling on our property in 1981 demonstrates the possibility that a hydraulic connection exists between the AROF and aqueous subsurface areas outside of this "invisible" surficial AROF boundary to the north. If this hydraulic connectivity does exist between the AROF and our

property, there is potential for other areas not known to also be affected. We do not believe the applicant has adequately proven this. While the areas within the proposed exemption area may not be suitable for drinking water, this has not been proven in the application with sufficient monitoring data.

We believe that the approval of this aquifer exemption request will violate provisions of the UIC program and will potentially fail to protect potential sources of drinking water for a large number of people outside of the proposed exemption area boundary. We believe that FM O&G's current aquifer exemption application has not shown with sufficient technical evidence that the proposed operational maintenance of the environmental quality of the proposed aquifer exemption area in the face of seasonal variability and the occurrence of accidents, failures, and extreme events. Similarly, there lacks sufficient studies on earthquake or seismic activity known within the region and the potential effects on the existing groundwater system or the potential for climate change including droughts or extreme storm events and the effects on existing groundwater system. Since preliminary approval has been given without these scientific elements or other elements such as sufficient monitoring and flow modeling, it appears there is an overall lack of understanding by the Division and the Water Boards for the importance that system identification and analysis and interpretation of field data are integral to the development of scientific theories about the behavior of complex environmental systems. Until additional information is provided to substantiate our findings, we strongly recommend that the Division provides a notice of incomplete submittal to the application and specify substantially more information and studies be required by FM O&G. We recommend that modeling software would be beneficial in predicting subsurface fluid (both groundwater and injection) migration and Zone of Endangering Influence (ZEI) calculations for the permit that has not been done thus far. Additionally, there is a lack of environmental monitoring data within the actual proposed aquifer exemption area to determine existing groundwater quality conditions nor is there any environmental monitoring data from any of the regional USDWs to determine baseline groundwater conditions of potentially affected wells being used for beneficial sources.

We appreciate your time and effort on reviewing and responding to our comments which you will find after the references and prior to the attachments of this letter. We request that the Division and the Water Boards deny this application request until further information is made available and a detailed monitoring program is in place to assure the public that our existing USDWs will remain safe for consumption for future generations.

Sincerely,

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REFERENCES

- California Department of Conservation, Division of Oil, Gas, and Geothermal Resources [Division] (2015) "Notice of Proposed Aquifer Exemption" Published August 20, 2015, link:
ftp://ftp.consrv.ca.gov/pub/oil/Aquifer_Exemptions/County/San_Luis_Obispo/Arroyo_Grande_Oilfield/Dollie_Sands_Pismo_Formation/Arroyo%20Grande%20AE%20Hearing%20Notice.pdf
- Clean Water Action [CWA] (2015) "Aquifer Exemption Program" Website Link :
<http://www.cleanwateraction.org/publication/aquifer-exemption-program> Accessed 9/20/15
- Cleath-Harris Geologists, Inc. [CHG] (2009) Stream Characterization and Impact Studies and Well Testing Program Pismo Creek Alluvial Aquifers, Price Canyon. October 23, 2009
- CHG (2015) Review of DWR Well Completion Reports for Wells Within One-Mile Radius of the Freeport-McMoRan Arroyo Grande Oil Field. June 25, 2015
- Freeport- Environmental Protection Agency [FM OP&G] (2015). Arroyo Grande Oilfield, San Luis Obispo County, California (Application Request for Aquifer Exemption-not stated in document). Link:
ftp://ftp.consrv.ca.gov/pub/oil/Aquifer_Exemptions/County/San_Luis_Obispo/Arroyo_Grande_Oilfield/Dollie_Sands_Pismo_Formation/Arroyo%20Grande%20Oilfield%20Edna%20Member%20Dollie%20Sands%20Pismo%20Formation%20Aquifer%20Exemption%20Application%20Complete.pdf
- URS (2014) FM O&G- Aquifer Water Quality Sampling Results Phase V Development of the Arroyo Grande Oil Field San Luis Obispo County, California. March 12, 2015
- U.S Environmental Protection Agency [EPA] (2014). Enhancing Coordination and Communication with States on Review and Approval of Aquifer Exemption Requests Under SDWA. Technical Memorandum. Office of Ground Water and Drinking Water (OGSDW). Published July 21, 2014. Link:
http://www.conservation.ca.gov/dog/general_information/Documents/EPA%20Aquifer%20Exemption%20Guidance%20and%20Checklist%20July%202014.pdf

Comment Section A: General Comments about the Proposed Aquifer Exemption:

Comment #1A: The information provided in the aquifer exemption application provides geospatial information that has not been made available to the public. This makes it particularly difficult to fully ascertain the geographic locations of proposed boundaries, geologic features, and monitoring information. Based on the documentation provided in the FEIR (Padre, 2004), USGS website GIS data for faults, the SLO County website, and the aquifer exemption application documentation made available to the public, none of this information is available for our review. Please make all geospatial information available to the public for use in Geographic Information Systems (GIS) format (e.g. shapefiles). This includes but is not limited to geologic features (e.g. Edna fault line), Phase V boundaries, proposed aquifer exemption boundary, and any other relevant project GIS information that is presented in the FM O&G aquifer exemption application or EIR (Padre, 2004).

Comment #2A: The inventoried water well locations (DWR Well Review) provided by CHG (2015) in Appendix G 1-1 lacks owner name, contact information, and name of aquifer for specific water wells. Please provide these in the form of tables in the application. Section C.1 of the Aquifer Exemption Checklist (EPA, 2014) requires that these elements are included.

Comment #3A: There is no map in the application showing the areal extent of the exemption boundary with all the domestic wells considered potentially down gradient of the exemption boundary. There is no map showing domestic wells with hydraulic connection to the exemption boundary. Both of these are required in Section C.1 of the Aquifer Exemption Checklist (EPA, 2014). Please provide maps of both of these in the resubmitted application.

Comment #4A: The map provided in Appendix I 1-2 (Figure 5-7) does not provide well identifiers anywhere on the map. This makes it difficult to interpret. Please label the figure accordingly.

Comment #5A: There appears to be no map indicating direction and speed of groundwater in the aquifer of proposed exemption. Section C.1 of the Aquifer Exemption Checklist (EPA, 2014) requires that these elements are included. Please provide these maps and indicate how the information was obtained.

Comment #6A: How does the applicant plan to demonstrate that the proposed injection and oil and gas operations will not significantly affect the long term water quality and quantity outside of the proposed aquifer exemption area? It is the responsibility of the Division and the Water Boards to make sure the applicant shows that the aquifer is isolated from other sources of groundwater outside of the proposed aquifer exemption area, that it will not affect the water quality of groundwater outside of the proposed exemption zone, and that the water within the exemption zone is not and will never be used as a drinking water source. Based on the available site documents, this has not been demonstrated. Our family and neighbors are concerned with the water quality and/or water quantity of our USDWs being negatively affected by the future operations within the proposed aquifer exemption area. In fact, there was oil bubbling up on our pasture land in the past that was in the local newspaper (See photos in Attachment 3). This is an indication that our property may in fact be hydraulically connected to the AROF. How can we be certain that this will not occur again, just based on the assurance from the Division that the geology will not allow for this to happen? To our knowledge, there have been no substantial studies prepared for FM O&G with respect to groundwater flow modeling performed by a third party. The report provided in Appendix A7f (CHG, 2009) focused on the Pismo Creek stream flow and Pismo Creek Valley alluvial groundwater as it relates to supply for agriculture on the King Ventures Spanish Springs North and South Ranches. This information was intended to assist with determining a protocol for a future water management program. Has this information been used to develop a more detailed groundwater flow modeling analysis? Has there been a detailed water management program developed from this information? It is the responsibility of the applicant to assure the public that the proposed expanded operations will not negatively affect the surrounding communities and their drinking water supplies. There are significant drinking water sources within the project vicinity. Please refer to Figure 2 in Attachment 1 for the locations of the concerned parties and USDW locations, there are many more not shown on this map. In fact, CHG (2015) indicates there are 53 water supply wells within a one mile radius of the Arroyo Grande Oilfield. It is indicated in CHG (2015) that the subsurface hydraulic connection between the Edna sub basin and Price Canyon water-bearing zones is restricted by faulting and folding, which act as barriers to groundwater flow. However, it also states that when aquifers of the Edna Valley are fully saturated, subsurface flow into Price Canyon may occur through alluvial deposits. Has there been a groundwater flow model for the region, specifically for the properties with USDWs? Has this model been validated with real time data? We understand that the Division feels that given the current geologic stratification that we will not be affected; however, there is not enough information on our specific properties to give us the feeling that we will be safe. We request that additional comprehensive groundwater studies be performed by a qualified hydrogeologist or groundwater engineer on the

proposed aquifer exemption area, within the AROF, our specific properties, and our neighboring properties which include the following (See Figure 2, Attachment 1):

- [Ex. 6 - Personal Privacy] San Luis Obispo, CA 93401
- [Ex. 6 - Personal Privacy] San Luis Obispo, CA 93401
- [Ex. 6 - Personal Privacy] San Luis Obispo, CA 93401
- [Ex. 6 - Personal Privacy] San Luis Obispo, CA 93401
- [Ex. 6 - Personal Privacy] Arroyo Grande, CA 93420
- [Ex. 6 - Personal Privacy] Arroyo Grande, CA 93420
- [Ex. 6 - Personal Privacy] San Luis Obispo, CA 93420
- [Ex. 6 - Personal Privacy] Arroyo Grande, CA 93420
- [Ex. 6 - Personal Privacy] Arroyo Grande, CA 93420
- [Ex. 6 - Personal Privacy] Arroyo Grande, CA 93420

Comment #7A: It is the responsibility of the applicant to demonstrate the baseline water quality conditions in drinking water wells surrounding the proposed aquifer exemption area and subsequently monitor these wells for the life of the project into the foreseeable future. In the FM O&G aquifer exemption application, there is no water quality data for any wells within the 1-mile radius. Appendix G 1-1 presents a review of DWR Well Completion Reports for wells within one-mile radius of the Freeport-McMoRan Arroyo Grande Oil Field (CHG, 2015). There is no water quality data for any of these wells. The only water quality data made available in the application is from the URS (2014) memo analyzing Well No. 1 (W-1) located on the northern portion of the Freeport-McMoRan property on the east side of Price Canyon Road. This well is located approximately 3,500 feet to the northwest of our property as shown in Figure 2. One static data point of groundwater quality data is not a statistically sufficient data (nor is it spatially acceptable) to provide an indication or demonstrate the water quality for the region. Similarly, there are no groundwater quality data provided within the proposed aquifer exemption area to show that the aquifer does not meet the drinking water standard criteria required for an aquifer exemption as stated in 40 CFR 146.4.

To our knowledge, there have been no comprehensive monitoring programs, setup to determine baseline concentrations for the existing USDWs within the northern portion of the AROF project limits or general vicinity of the proposed aquifer exemption area. Appendix I 1-2 provides the Monitoring Wells Map showing three wells to the North near our parcel and more monitoring wells to the south. However, there has been no comprehensive monitoring program on any of the residential water supply wells or USDWs.

It is the responsibility of the applicant to perform sufficient monitoring on all USDW wells within the vicinity in order to assure the public that no existing drinking water wells (like ours) are being compromised with the proposed actions. Without a sufficient groundwater model for the region of all potentially affected parties with existing USDWs, there is no way to be certain what the effects of the proposed operations will be, and there are no baseline data available. We understand that the Division feels that given the current geologic stratification that we will not be affected; however, there is not enough information on our specific properties to give us the feeling that we will be safe. In fact, our water was tested in 2012 and was determined to be safe for drinking. Please see Attachment 2 for the water quality and well completion results conducted on our USDW. We request a more comprehensive groundwater monitoring program needs to be in place prior to approval of this application by the Division and the Water Boards. Specifically, we request that additional studies be performed on our properties and our neighboring properties which include the following:

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Comment #8A: In the event that our USDW system is compromised by the proposed operations, what type of financial surety is in place to compensate us or other landowners? Additionally, having the proposed aquifer exemption area so close to our property boundary will likely lower the real estate value of our property- what type of compensation is proposed by FM O&G to us and other landowners that are directly affected by this application request? Have there been any socio-economic studies associated with the proposed application request?

Comment #9A: We request that a 1,250 foot radius buffer zone be applied to our property where the Aquifer Exemption Area may not be located. If this cannot be provided, we request some form of compensation for loss in real estate prices and/or other socioeconomic hardship associated with the

stigma of having an Aquifer Exemption Area that close to our property boundary. Please see Figure 3 in Attachment 1 for the proposed buffer area around our property.

Comment #10A: Title Page of Application. The actual title page does not provide the date published nor does it even specify that this is an aquifer exemption request application. We recommend revising the document to reflect what it actually is (e.g. an aquifer exemption request application).

Comment #11A: Figure 1 & Figure 1.1 of Application (Page 6 & 7) is difficult to read and is of poor quality and is not professionally prepared. The small font on the important descriptors of map features is pixilated and difficult to read. Please revise this map to be legible with large font and clearer.

Comment #12A: There appear to a number of errors provided in the Core Data tables for porosity, grain density, max hydraulic conductivity, water saturation, and oil saturation where a value of -999.25 is indicated. Please fix this or explain why these errors occur.

Comment #13A: The only water quality data made available in the application is from the URS (2014) memo analyzing Well No. 1 (W-1) located on the northern portion of the Freeport-McMoRan property on the east side of Price Canyon Road. Please revise Figure 2 of URS (2014) to include the proposed aquifer exemption boundary with respect to the well sampled. Additionally, there is no mention of a field quality assurance/quality control (QA/QC) program for the environmental groundwater monitoring of the one well. Please revise and provide information on the data validation and QC (i.e. rinsate collection, field duplicate samples, etc.). There is no mention of the methods and results of the QC analysis in the technical memorandum itself.

Comment #14A: Appendix I 1a provides the current monitoring well network; however, this section is poorly presented and lacks any credible presentation of the existing monitoring results (i.e. no graphs, tables, or statistical analysis). Additionally, there are no labels of monitoring locations provided in Appendix I 1-2. We request that this appendix is revised to better represent the existing data and clearly label all monitoring locations.

Comment #15A: Page 232 of the Appendices (only) section of the application. It is difficult to read the tables because of poor formatting.

Comment #16A: It has been documented that water wells inside and outside the oil field limits are naturally contaminated with hydrocarbons because of the prevalence of the tar accumulations (Freeport-McMoRan, 2015). This is a broad statement because there was no data collected prior to the initial development of the oil fields in the early 1900s. Please comment on how you can conclude that these are

naturally contaminated when the actual oilfield production began in 1906 when no baseline data was available prior to this time period.

Comment #17A: We recommend that further information is collected on the physical environment within the AROF and the proposed aquifer exemption area in order to adequately model the rate and direction of groundwater movement in order to develop a comprehensive environmental monitoring sampling plan. It is critical that expert knowledge plays an important role when selecting future groundwater monitoring well locations. A monitoring well in the wrong location is useless for detecting leaks in the system. Based on available monitoring data, the applicant has not shown that sufficient information is available to warrant no further monitoring. Please indicate how this will be achieved and by whom (e.g. by the applicant, the Division, or the EPA.). Please discuss how the target population unit will be defined and explain how the sampled population will equal the target population. Since there is available information on the geology a cost-effective sampling plan can be devised. Please describe the proposed sampling frequency and locations.

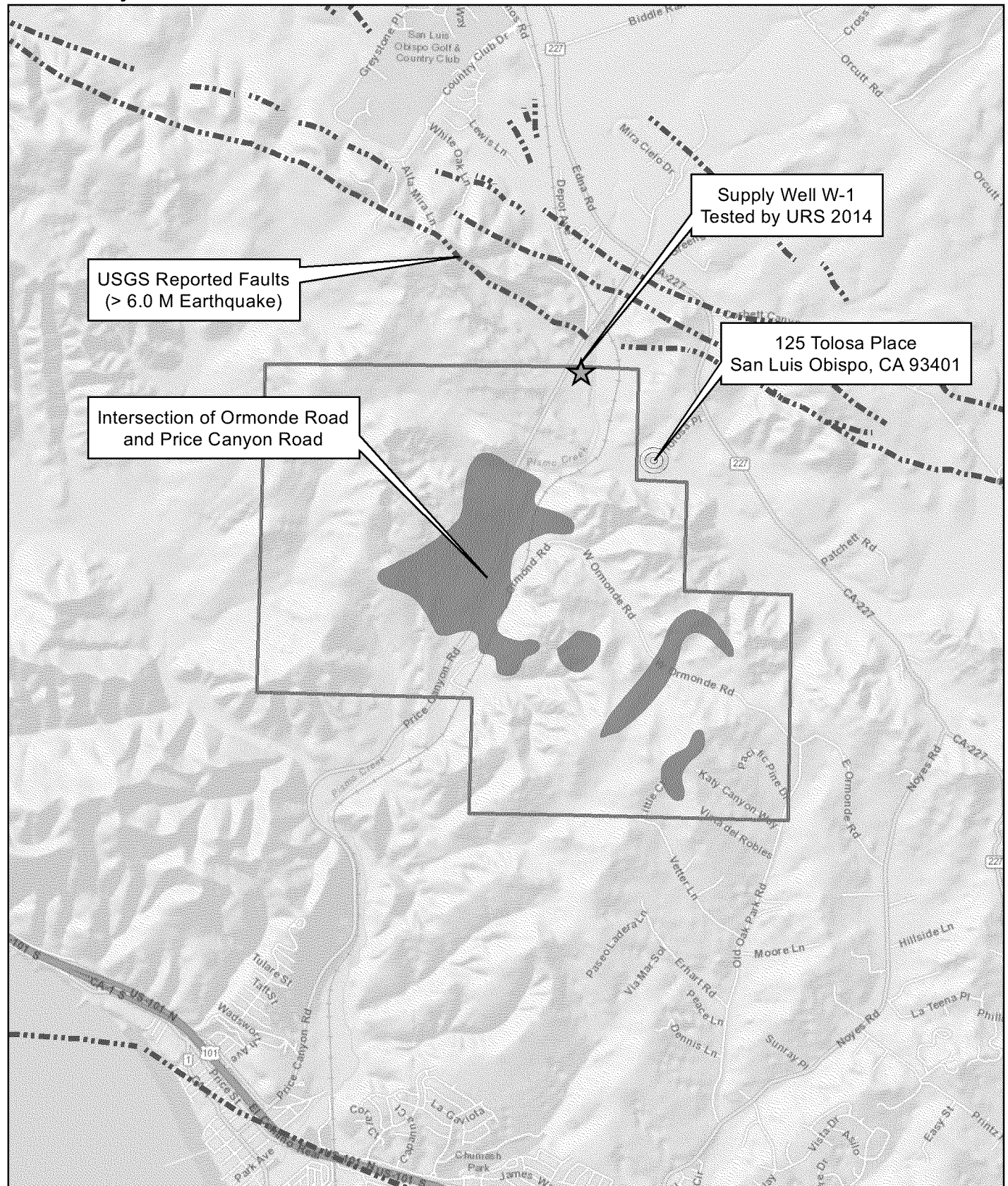
Comment #18A: The proposed aquifer exemption application lacks sufficient studies on earthquake or seismic activity known within the region and the potential effects on the existing groundwater system. Please explain how this will be achieved.

Comment #19A: The proposed aquifer exemption application lacks sufficient information of the potential effects of climate change in the region including continued drought or extreme storm events and the subsequent effects on existing groundwater system

Comment #20A: The EPA suggests specific information for exempting an aquifer under 40 CFR 146.4(b), including production history of wells in the vicinity of the aquifer, availability of alternative water supplies, ability of current supplies in the area to meet future needs, costs of treatment, and cost of developing the water supply from the proposed exemption area. There does not appear to be a Statement of Basis which is essential to approving any exemption. Please explain why this is not included, and explain how the applicant will be required to provide this information and resubmit the application.



ATTACHMENT 1

FIGURES



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 Arroyo Grande Oil Field Boundary
 Existing Aquifer Exemption Area

Prepared for:



Prepared by:

NATALIE RISNER

Title:

VICINITY MAP

Location:

SAN LUIS OBISPO COUNTY

Project no.:

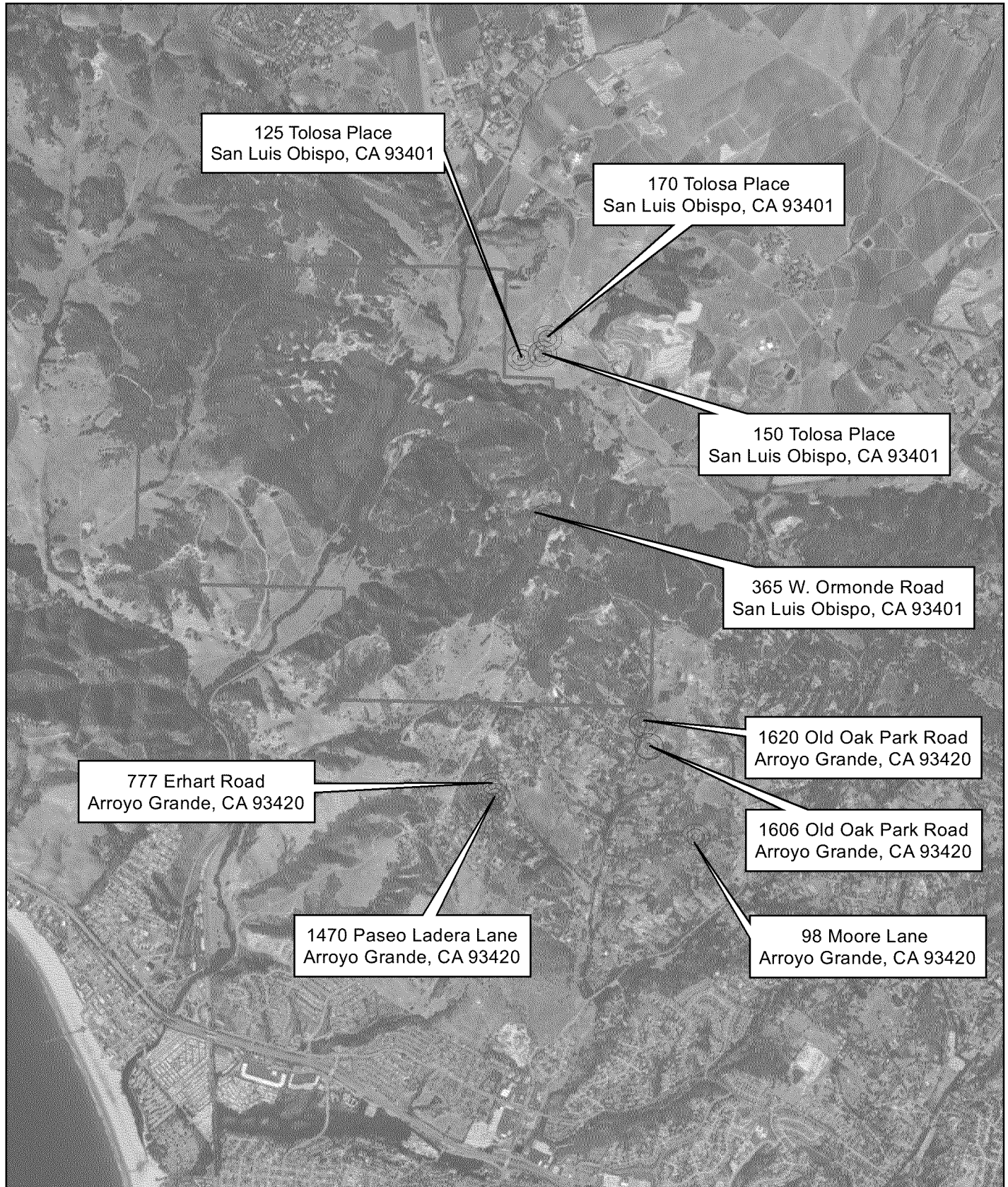
ARROYO

Date:

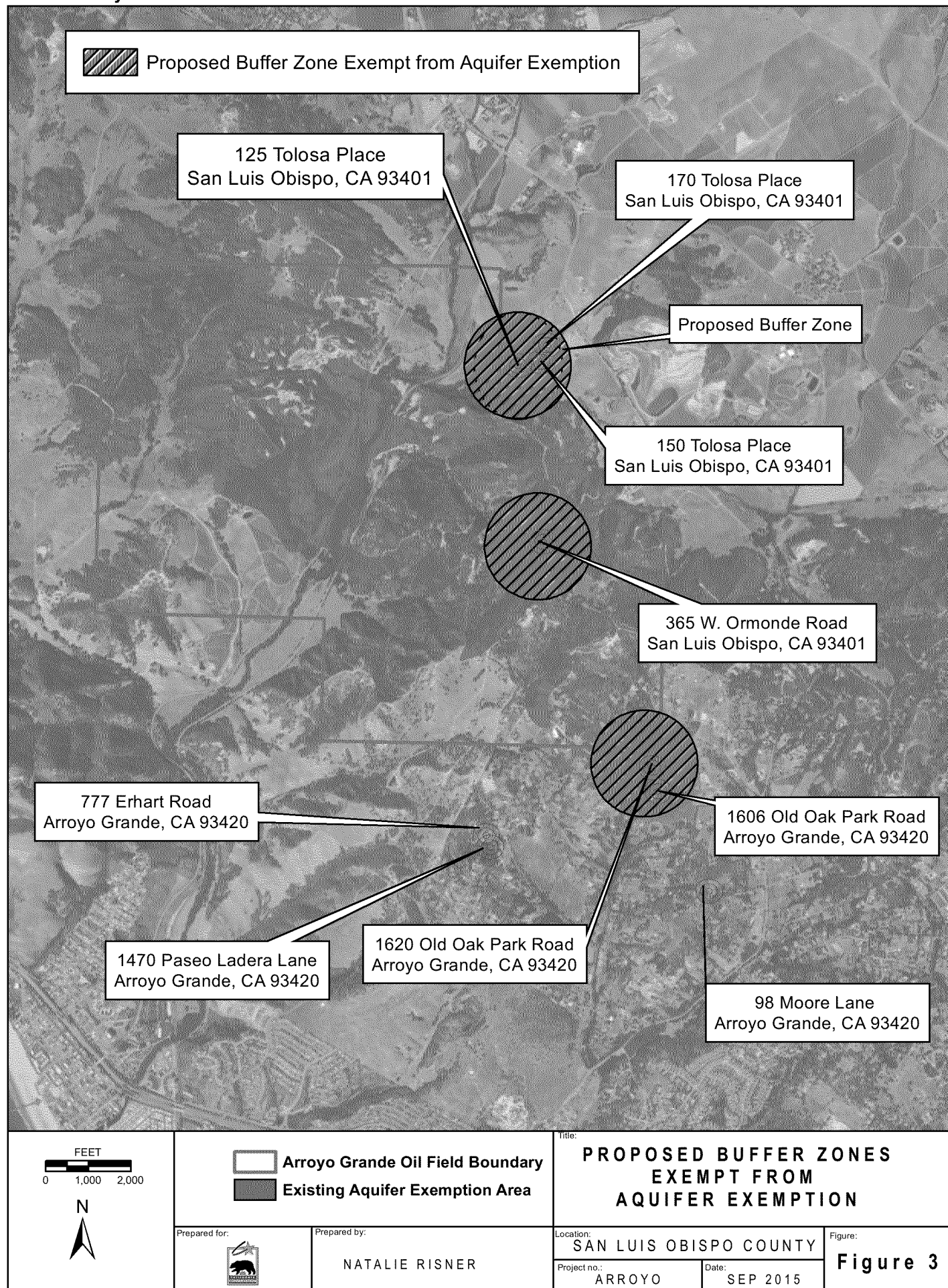
SEP 2015

Figure:

Figure 1



<p>FEET</p> <p>0 1,000 2,000</p> <p>N</p>	<p> Arroyo Grande Oil Field Boundary</p> <p> Existing Aquifer Exemption Area</p>		<p>Title:</p> <p>PROPOSED GROUNDWATER MONITORING LOCATIONS</p>	
	<p>Prepared for:</p> <p></p>	<p>Prepared by:</p> <p>NATALIE RISNER</p>	<p>Location:</p> <p>SAN LUIS OBISPO COUNTY</p>	<p>Figure:</p> <p>Figure 2</p>
		<p>Project no.:</p> <p>ARROYO</p>	<p>Date:</p> <p>SEP 2015</p>	



ATTACHMENT 2

USDW WELL INFORMATION

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DRINKING WATER EVALUATION

"MCL" is Maximum Contaminant Level, the highest acceptable concentration of analyte. Compare these MCL's to your results. Acceptable RESULTS are less than the MCL's for each analyte. The MCL's are determined by California Department of Health Services. They are listed in the Code of Regulations, Title 22, Sections 64431 & 64449.

"ANALYTE" is the chemical that is measured.

"UNITS" are in mg/L (ppm). mg/L = milligrams per liter. ppm = parts-per-million. To convert mg/L to ug/L (ppb): 1 mg/L = 1,000 ug/L. 1 ug/L = 0.001 mg/L.

PRIMARY STANDARDS - INORGANIC CHEMICALS

Primary standards analytes have potential toxic effects when above the MCL.

ANALYTE	MCL	UNITS	ANALYTE	MCL	UNITS
Aluminum	1	mg/L	Fluoride	2	mg/L
Antimony	0.006	mg/L	Mercury	0.002	mg/L
Arsenic	0.01	mg/L	Nickel	0.1	mg/L
Barium	1	mg/L	Nitrate as NO ₃	45	mg/L
Beryllium	0.004	mg/L	Nitrite	1	mg/L
Cadmium	0.005	mg/L	Selenium	0.05	mg/L
Chromium	0.05	mg/L	Thallium	0.002	mg/L
Cyanide	0.15	mg/L			
Asbestos	7	MFL (usually waived in local Counties)			
Lead	0.015	mg/L (Federal Action Level at distribution points)			

SECONDARY STANDARDS/Consumer Acceptance Limits

ANALYTE	MCL	UNITS	ANALYTE	MCL	UNITS
Aluminum	0.05	mg/L	Manganese	0.05	mg/L
Color	15	Units	MBAS	0.5	mg/L
Copper	1	mg/L	Odor	3	Units
Corrosivity	Non-corrosive		Silver	0.1	mg/L
Iron	0.3	mg/L	Turbidity	5	Units
MTBE (VOC)	0.005	mg/L	Zinc	5	mg/L
Thiobencarb	0.001	mg/L (usually required only in Monterey County)			

	MCL: RECOMMENDED	UPPER	SHORT TERM	UNITS
Total Dissolved Solids	500	1000	1500	mg/L
Electrical Conductance	900	1600	2200	µmhos/cm
Chloride	250	500	600	mg/L
Sulfate	250	500	600	mg/L

Analytes not listed above have no MCL established, so any level is acceptable (like Sodium).
NOTE: Organic chemicals, solvents, pesticides, herbicides, radioactivity or bacteria are not included in above tests.

part of second standards

Xylene (Sum) CA Primary MCL: 1750 ug/L
Naphthalene: DHS IDW Action level: 170 ug/L
Methanol, USEPA IRIS reference dose: 3500 ug/L



Amanda Smith
Abalone Coast Analytical, Inc.
141 Suburban, Suite C-1
San Luis Obispo, CA 93401

30 May 2012

RE: Drinking Water Testing

Work Order: 1202568

Dear Client:

Enclosed is an analytical report for the above referenced project. The samples included in this report were received on 18-May-12 14:50 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Assurance Manual, applicable standard operating procedures, and other related documentation. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

A handwritten signature in cursive script, appearing to read "Meredith Sprister", is written in dark ink.

Meredith Sprister

Project Manager

307 Roemer Way, Suite 300, Santa Maria, CA 93454

www.oecusa.com

TEL: (805) 922-4772

FAX: (805) 925-3376



Oilfield Environmental and Compliance, INC.

Abalone Coast Analytical, Inc.
141 Suburban, Suite C-1
San Luis Obispo CA, 93401

P
P

Ex. 6 - Personal Privacy

Reported:
30-May-12 16:18

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Well	1202568-01	Drinking Water	17-May-12 14:15	18-May-12 14:50

Oilfield Environmental and Compliance

307 Roemer Way, Suite 300, Santa Maria, CA 93454

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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Page 2 of 9



Oilfield Environmental and Compliance, INC.

Abalone Coast Analytical, Inc.
141 Suburban, Suite C-1
San Luis Obispo CA, 93401

Ex. 6 - Personal Privacy

Reported:
30-May-12 16:18

Well 1202568-01 (Drinking Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

Oilfield Environmental and Compliance

Wet Chemistry by EPA or APHA Standard Methods

Cyanide (total)	ND	0.040	mg/L	1	A205493	21-May-12	22-May-12	SM4500CN-C/E	
-----------------	----	-------	------	---	---------	-----------	-----------	--------------	--

Anions by EPA Method 300.0

Fluoride	ND	0.40	mg/L	1	A205454	18-May-12	18-May-12	EPA 300.0	
Nitrate as NO ₃	ND	1.8	"	"	"	"	"	"	
Nitrite as N	ND	0.40	"	"	"	"	"	"	

Metals (Drinking Water) by EPA 200 Series Methods

Aluminum	ND	0.050	mg/L	1	A205655	29-May-12	30-May-12	EPA 200.8	
Antimony	ND	0.0050	"	"	"	"	"	"	
Arsenic	ND	0.0020	"	"	"	"	"	"	
Barium	0.055	0.0010	"	"	"	"	"	"	
Beryllium	ND	0.0010	"	"	"	"	"	"	
Cadmium	ND	0.0010	"	"	"	"	"	"	
Chromium	0.0031	0.0020	"	"	"	"	"	"	
Lead	ND	0.0010	"	"	"	"	"	"	
Mercury	ND	0.00020	"	"	A205681	30-May-12	30-May-12	EPA 245.1	
Nickel	0.0052	0.0010	"	"	A205655	29-May-12	30-May-12	EPA 200.8	
Selenium	0.0028	0.0020	"	"	"	"	"	"	
Thallium	0.0011	0.0010	"	"	"	"	"	"	

Oilfield Environmental and Compliance

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Abalone Coast Analytical, Inc
141 Suburban Road, Ste C-1
San Luis Obispo, CA 93401
www.abalonecoastanalytical.com
info@abalonecoastanalytical.com

May 17th, 2012

To Whom it May Concern,

On behalf of Mr. Tobin Risner, Abalone Coast would like to certify that the water at **Ex. 6 - Personal Privacy** passed with a result of ND, or Non Detect, for both Coliform and E. Coli bacteria.

Thank you for your time,

A handwritten signature in cursive script, appearing to read "Amanda Smith".

Laboratory Director
(805)595-1080

Abalone Coast Analytical, Inc.

141 Suburban Road, Suite C-1 San Luis Obispo CA, 93401

Phone: 595-1080 Fax: 595-1080

Order #: 12-2861

Date/Time Rec'd: 5/16/12 1600

Ex. 6 - Personal Privacy

Contact:

Sampler:

Project:

Sample #	Sample Description	Date / Time	Analysis	Method	Result	Units	RL	Completed
-1	Well 1	5/16/12 1500	MPN Total Coliform	SM 9223 B	ND.	/100mL	1	05/17/12
			MPN E-coli	IDEXX	ND.	/100mL	1	05/17/12

Report Completion date: 5/17/12

Reviewed:

Amanda Smith
Amanda Smith, Lab Director

ND = Analyte NOT DETECTED at or above RL

* Result detected below the RL are estimated concentration

Abalone Coast Analytical, Inc.

141 Suburban Road, Suite C-1 San Luis Obispo CA, 93401

Phone: 595-1080 Fax: 595-1080

Order #: 12-2862

Date/Time Rec'd: 5/16/12 1600

Ex. 6 - Personal Privacy

Contact:

Sampler:

Project:

Sample #	Sample Description	Date / Time	Analysis	Method	Result	Units	RL	Completed
-1	Well 2	5/16/12 1500	MPN Total Coliform	SM 9223 B	ND.	/100mL	1	05/17/12
			MPN E-coli	IDEXX	ND.	/100mL	1	05/17/12

Report Completion date: 5/17/12

Reviewed:

Amanda Smith
Amanda Smith, Lab Director

ND = Analyte NOT DETECTED at or above RL

* Result detected below the RL are estimated concentration

RICHETTI COMPLETE SOLUTIONS
147 BRISCO RD
ARROYO GRANDE, CA 93420
805-489-4065 FAX
805-489-4052 OFFICE

Fax

To: Ex. 6 - Personal Privacy From: *Greg Rice*
Fax: Ex. 6 - Personal Privacy Pages: *2*
Phone: Date: *4/2/12*
Re: *Water Analysis* CC:
☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

Ex. 6 - Personal Privacy

THE TDS IS Below 1200 ppm
Therefore Whole House RO is NOT
Required only up to you for
Lowering TDS. TO ABOUT 200ppm.

First option would BE to Remove
Hardness & Manganese, then provide
Purified Drinking Water. with Reverse osmosis
this would BE THE SAME FOR LAURA'S
HOUSE ONCE PRESSURE IS FIXED

Greg Rice



Certificate of Analysis

Ex. 6 - Personal Privacy

Report Issue Date: 03/12/2012 12:59

Received Date: 02/29/2012

Received Time: 07:30

Lab Sample ID: A2B1991-01
 Sample Date: 02/28/2012 10:54
 Sample Type: Grab

Client Project: 12-1180
 Sampled by: Client
 Matrix: Drinking Water

Sample Description: Well // 12-1180-1

General Chemistry

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Aggressive Index		13				A202516	03/12/12	03/12/12	
Alkalinity as CaCO ₃	SM 2320 B	640	30	mg/L	10	A202170	03/02/12	03/02/12	
Bicarbonate as CaCO ₃	SM 2320 B	640	30	mg/L	10	A202170	03/02/12	03/02/12	
Carbonate as CaCO ₃	SM 2320 B	ND	30	mg/L	10	A202170	03/02/12	03/02/12	
Hydroxide as CaCO ₃	SM 2320 B	ND	30	mg/L	10	A202170	03/02/12	03/02/12	
Chloride	EPA 300.0	220	5.0	mg/L	5	A202063	02/29/12	02/29/12	
Conductivity @ 25C	SM 2510 B	1900	1.0	umhos/cm	1	A202113	03/01/12	03/01/12	
Langlier Index	SM 2330 B	1.3				A202516	03/12/12	03/12/12	
MBAS, Calculated as LAS, mol wt 340	SM 5540 C	ND	0.050	mg/L	1	A202087	02/29/12 15:22	02/29/12 15:22	
pH (1)	SM 4500-H+ B	8.0		pH Units	1	A202113	03/01/12	03/01/12	
pH Temperature in °C		19.0							
Sulfate as SO ₄	EPA 300.0	43	10	mg/L	5	A202063	02/29/12	02/29/12	
Total Dissolved Solids	SM 2540C	1100	5.0	mg/L	1	A202105	03/01/12	03/05/12	

Metals

Analyte	Method	Result	RL	Units	RL Mult	Batch	Prepared	Analyzed	Qual
Calcium	EPA 200.7	120	0.10	mg/L	1	A202125	03/01/12	03/08/12	
Copper	EPA 200.7	ND	0.050	mg/L	1	A202125	03/01/12	03/08/12	
Hardness as CaCO ₃		359.0	0.41	mg/L					
Iron	EPA 200.7	0.13	0.050	mg/L	1	A202125	03/01/12	03/08/12	
Magnesium	EPA 200.7	69	0.10	mg/L	1	A202125	03/01/12	03/08/12	
Manganese	EPA 200.7	0.051	0.010	mg/L	1	A202125	03/01/12	03/08/12	
Potassium	EPA 200.7	8.9	2.0	mg/L	1	A202125	03/01/12	03/08/12	
Silver	EPA 200.7	ND	0.010	mg/L	1	A202125	03/01/12	03/08/12	
Sodium	EPA 200.7	210	1.0	mg/L	1	A202125	03/01/12	03/08/12	
Zinc	EPA 200.7	0.063	0.050	mg/L	1	A202125	03/01/12	03/08/12	

1414 Stanislaus Street

Fresno, CA 93706

(559) 497-2888

FAX (559) 486-6835

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 Environmental Engineering | Geotechnical Engineering | Materials Testing

Page 3 of 12



Pump Test Report

Customer
Address
City and State
Location of Test

Ex. 6 - Personal Privacy

SAN LUIS OBISPO, CA 93401
same

Date: 6-15-12

Test Information:

Time	Pumping Level	G.P.M
11.00AM	59'	5
1115	64'	5
1130	69'	5
1145	77'	5
1200PM	84'	5
1215	85'	5
1230	86'	5
1245	87'	5
100	87'6"	5
130	87'6"	5
200	87'6"	5
230	87'6"	5
300	87'6"	5

Well Information:

Well Size 8"
Test pump size 7 S410
Standing Level 59'
Hours of Running 4


Well Depth 147'
Pump Setting 140'

Test Started 1100am
Recovery 38' in 30min

Shut Down 300pm

Additional Information:

TESTED BY JIM BUSTAMATE


Ben Thompson
Pump Department Manager

A FARMER OWNED COOPERATIVE

224 Tank Farm Road, Post Office Box 111, San Luis Obispo, CA 93406 • 805.543.3751

Also serving you in Arroyo Grande, Buellton, Paso Robles, and Santa Maria

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ATTACHMENT 3

JULY 1981

TRIBUNE ARTICLE ON OIL BUBBLING AT PROPERTY



Tony Hertz/Telegram Tribune

Oil gushes in mishap along Highway 227

Oil bubbles up in couple's rural backyard

It's a gusher!

Laura Smith looked outside the window of her home on Highway 227 Friday afternoon and saw a jet of black oil bubbling up from her backyard.

Only problem is, Laura and Dale Smith lease the oil and mineral rights to Grace Petroleum Co. on the 23 acres where they raise and graze horses.

Mrs. Smith said she noticed the oil bubbling furiously to the surface about 1 p.m.

She alerted Grace Petroleum at the nearby Price Canyon operations. By the early evening when workers had spent 1½ hours moving earth to contain it, the oil had formed a pool some 30 feet across.

Greg Kalkbrenner, district engineer for Grace in Santa Maria, traced the problem to a nearby oil pump, where steam was turned on about three weeks ago to make the oil easier to bring up.

Steam from the oil pump apparently backed up along an outcropping until oil finally was forced through the ground, Kalkbrenner said.

Spontaneous oil pools have appeared several times before in Price Canyon, he said.

Once the oil stopped gushing, Price Canyon field superintendent Jim Jordan said workers would cover up the pool with topsoil and reseed the land so it could revert to pasture.

